



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pure-Seed Testing, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (8 U.S.C. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CHEWINGS FESCUE

'Shadow'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 17th day of June in the year of our Lord one thousand nine hundred and eighty-two.

Attest:

Kenneth A. Evans
Acting
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture



INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY Syn W		1b. VARIETY NAME Shadow		FOR OFFICIAL USE ONLY PV NUMBER 8100155	
2. KIND NAME chewings fescue		3. GENUS AND SPECIES NAME Festuca rubra Subsp. commutata		FILING DATE 8/10/81	TIME 11:00 A.M.
4. FAMILY NAME (BOTANICAL) Gramineae		5. DATE OF DETERMINATION July, 1979		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 8/10/81 3/12/82
6. NAME OF APPLICANT(S) Pure-Seed Testing, Inc.		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) P. O. Box 449 Hubbard, OR 97032		8. TELEPHONE AREA CODE AND NUMBER (503) 981-7333	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Oregon		11. DATE OF INCORPORATION 6/3/74	

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
 Dr. William A. Meyer
 Pure-Seed Testing, Inc.

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- 13B. Exhibit B, Novelty Statement.
- 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) YES NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? YES NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? FOUNDATION REGISTERED CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)
 The Netherlands, November, 1979
 The United Kingdom, November, 1980

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? YES NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

8/10/81
 (DATE)

William A. Meyer
 (SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

EXHIBIT A.

ORIGIN AND BREEDING HISTORY OF
SHADOW CHEWINGS FESCUE

1. Germplasm of chewings fescue collected from old turf areas throughout the Northeastern United States and two European sources were screened for powdery mildew in the greenhouse as seedlings. A total of 1570 attractive seedlings showing a high level of resistance to powdery mildew were then transferred to a space plant nursery. Open pollinated seed was then harvested from a number of attractive, disease resistant plants. Seedlings of these progenies were then again screened for resistance to powdery mildew in the greenhouse. A total of 2,830 attractive, powdery mildew resistant seedlings were transferred to a space plant nursery. Fifty-three attractive parental clones were then selected from this nursery to an isolated nursery prior to anthesis. More than half of these 53 parental clones resulted from open-pollinated seed from a clone selected from Eastern Long Island, New York.

Seed resulting from these 53 parental clones in isolation was then used to put through 2 cycles of selection for seed yield and attractive appearance as space plants. One hundred forty attractive clones with uniform early maturity, field resistance to powdery mildew, netblotch invited by Helminthosporium dictyoides and rust caused by Puccinia crandahlia and good seed yielding abilities were selected from 108,000 space plants in the second cycle of selection. These selected 140 clones were transplanted in an isolation area for production of breeder seed of Shadow chewings fescue.

2. These 140 clones are being maintained vegetatively for the production of breeder seed.

3. Breeder seed will be used to plant Foundation fields and foundation fields will be used to produce certified fields.

4. No variants have been observed in the reproduction and multiplication of Shadow chewings fescue.

5. Breeders, foundation and certified seed of Shadow have produced turf of good quality, uniformity and stability. No differences have been observed when breeder's seed and foundation seed have been compared in seed yield trials.

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EXHIBIT B.

NOVELTY STATEMENT ON
SHADOW CHEWINGS FESCUE

Shadow chewings fescue most closely resembles the variety Banner except that it is: (1) Five days earlier maturing than Banner. (2) Resistant to Puccinia crandahlia and powdery mildew, while Banner is susceptible. (3) Is a better seed yielder than Banner.

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TABLE 5.

FIFTY PERCENT HEADING DATES OF CHEWINGS FESCUES
IN YIELD TRIALS NEAR HUBBARD, AND SILVERTON, OREGON
FOR 1980 and 1981

Variety	1979 Spring Planting	
	1980 Dates	1981 Dates
Shadow	4/30	4/29
Koket	4/25	4/24
Banner	5/5	5/4
Jamestown	5/6	5/7
Highlight	4/26	4/25
Checkers	4/24	4/25

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TABLE 6.

RUST (*Puccinia crandahlia*) DATA ON CHEWINGS FESCUES
 IN YIELD TRIALS LOCATED NEAR HUBBARD, OREGON
 SEEDED SPRING, 1979 IN 4, 6' ROWS 14" APART.

Variety	Rust Incidence 9-1 (9=best) 6/10/80	Rust Incidence 9-1 (9=best) 6/15/81	2 Year Average	Stan. Error of Mean
Shadow	8.0	9.0	8.5	+ 0.28
Koket	6.0	6.0	6.0	+ 0.00
Banner	2.0	3.5	2.8	+ 0.47
Jamestown	2.5	2.0	2.8	+ 0.25



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TABLE 7.

TURF TRIALS UNDER SHADE TREES
 SEEDED OCT. 2, 1977 NEAR HUBBARD, OREGON
 MAINTAINED AT A 2" CUTTING HEIGHT AND MODERATE FERTILITY

Variety	Percent Powdery Mildew Infections			Percent Green Cover 10/10/80
	4/20/78	4/2/79	10/10/80	
Shadow	1.0	1.0	1.3	81.7
Jamestown	22.0	22.0	40.0	36.7
Banner	22.0	15.0	31.6	40.0
LSD at 0.05	15.0	13.2	16.0	30.2



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EXHIBIT D.

ADDITIONAL DESCRIPTION OF
SHADOW CHEWINGS FESCUE

Shadow is a moderately low growing, turf-type chewings fescue capable of producing an attractive, dense, fine textured turf with a bright, medium dark green color. It has performed well in northeastern and northwestern U.S. turf trials with improved resistance to netblotch (caused by H. dictyoides) and dollar spot comparable to Banner and Jamestown (Tables 1, 2, 3).

In shade trials near Hubbard, Oregon it had significantly better powdery mildew resistance and shade tolerance than Banner and Jamestown (Table 7). In seed yield evaluation trials Shadow has had significantly better Puccinia crandahlia resistance, is significantly earlier than Jamestown and Banner and has better seed yields (Table 5, 6, 8).

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8. LEAF BLADE:

0 ANTHOCYANIN: 0 = ABSENT 1 = PRESENT 0 HAIRS (BASAL): 0 = ABSENT 1 = PRESENT 0 MARGINS: 1 = SMOOTH 2 = SEMI-ROUGH 3 = ROUGH

87 mm LENGTH (FIRST LEAF BELOW FLAG LEAF) 2.8 mm WIDTH See Table 4

8 mm SHORTER THAN 33 mm LONGER THAN 33 mm NARROWER THAN 33 mm WIDER THAN. Includes comparison variety fields for length and width.

9. LEAF SHEATH (Plant Base):

1 COLOR: 1 = WHITE (HIGHLIGHT) 2 = RED 0 AURICLE HAIRINESS: 0 = ABSENT 1 = PRESENT

10. PANICLE (Mature plant)

5 1/2" row - See Table 4

319 NUMBER OF PANICLES PER ~~XXXX~~ (FIRST YEAR OF PRODUCTION - FALL OR SPRING PLANTING SPECIFY Spring)

147 mm LENGTH GRAMS OF SEED PER PANICLE

Comparison variety fields for length and weight. Includes fields for mm shorter/longer than and grams less/more seed than.

1 SHAPE: 1 = NARROW-TAPERING 2 = EGG SHAPE 3 = OBLONG 4 = OTHER (SPECIFY)

2 TYPE: 1 = OPEN 2 = INTERMEDIATE 3 = COMPACT

1 HABIT: 1 = ERECT 2 = NODDING

2 BRANCHES: 1 = SMOOTH 2 = ROUGH

COLOR (At 50% flowering): 1 = YELLOWISH GREEN 2 = GREEN 3 = BLUISH GREEN 4 = PURPLISH 5 = REDDISH 6 = OTHER (SPECIFY)

11. PALEA:

HAIRS (ON KEELS): 0 = ABSENT 1 = SHORT (OLDS) 2 = LONG (RAINIER)

12. LEMMA:

HAIRS: 0 = ABSENT 1 = PRESENT TEXTURE: 1 = SMOOTH 2 = ROUGH

54 mm LEMMA LENGTH 10 mm LEMMA WIDTH

Comparison variety fields for lemma length and width. Includes fields for mm shorter/longer than and mm narrower/wider than.

1 AWNS: 0 = ABSENT 1 = PRESENT

28 mm AWN LENGTH

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782
OBJECTIVE DESCRIPTION OF VARIETY
FESCUE
(*Festuca* spp.)

NAME OF APPLICANT(S) <u>Pure-Seed Testing, Inc.</u>	VARIETY NAME OR TEMPORARY DESIGNATION <u>Shadow chewings fescue</u>
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) <u>P. O. Box 449 Hubbard, OR 97032</u>	FOR OFFICIAL USE ONLY PVPO NUMBER <u>8100155</u>

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Ranges may be given also. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors; designate system used: _____ Describe location of test area _____
All questions need not be answered, however, completeness should be striven for in order to establish the most adequate Variety Identification.

1. SPECIES: (With comparison varieties for use below - use varieties within species of application variety)

<input type="text" value="3"/>	1 = <u>F. ARUNDINACEA</u> (TALL) 11 = ALTA 12 = FAWN 13 = GOAR 14 = KENTUCKY 31
	2 = <u>F. PRATENSIS</u> (MEADOW) 21 = ENSIGN 22 = TRADER
	3 = <u>F. RUBRA</u> SSP. <u>COMMUTATA</u> (CHEWINGS) 31 = CASCADE 32 = HIGHLIGHT 33 = JAMESTOWN
	4 = <u>F. RUBRA</u> SSP. <u>RUBRA</u> (RED) 41 = BOREAL 42 = PENNLAWN 43 = DAWSON
	5 = <u>F. OVINA</u> VAR. <u>OVINA</u> (SHEEP)
	6 = <u>F. LONGIFOLIA</u> (HARD) 61 = DURAR 62 = BILJART (C-26) 63 = SCALDIS
	7 = OTHER (SPECIFY) F. _____

2. CYTOLOGY

<input type="text" value="4"/>	<input type="text" value="2"/>	2n CHROMOSOME NUMBER
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3. ADAPTATION: (O = Not Tested; 1 = Not Adapted; 2 = Adapted)

<input type="text" value="2"/>	NORTHEAST	<input type="text"/>	SOUTHEAST	<input type="text"/>	NORTH CENTRAL	<input type="text" value="2"/>	PACIFIC N.W.	<input type="text"/>	OTHER (SPECIFY) _____
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4. MATURITY: (50% Headed) Give Test Area Near Hubbard & Silverton, Oregon

<input type="text" value="0"/>	<input type="text" value="6"/>	DAYS EARLIER THAN	<input type="text" value="3"/>	<input type="text" value="3"/>	}	COMPARISON VARIETY See Table 5
		MATURITY SAME AS	<input type="text"/>	<input type="text"/>		
<input type="text" value="0"/>	<input type="text" value="4"/>	DAYS LATER THAN	<input type="text" value="3"/>	<input type="text" value="2"/>		

5. PLANT HEIGHT: (At maturity to top of panicle)

<input type="text" value="9"/>	<input type="text" value="9"/>	<input type="text" value="2"/>	mm HEIGHT	}	COMPARISON VARIETY See Table 4
<input type="text"/>	<input type="text"/>	<input type="text"/>	mm SHORTER THAN		
		<input type="text"/>	HEIGHT SAME AS		
<input type="text" value="1"/>	<input type="text" value="5"/>	<input type="text"/>	mm TALLER THAN	<input type="text" value="3"/>	<input type="text" value="3"/>

6. GROWTH HABIT (Mature)

<input type="text" value="2"/>	1 = ERECT (KENTUCKY 31) 2 = SEMI-ERECT (HIGHLIGHT) 3 = PROSTRATE
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7. RHIZOMES

<input type="text"/>	<input type="text"/>	mm LENGTH	<input type="text"/>	<input type="text"/>	mm WIDTH
<input type="text" value="0"/>	0 = ABSENT 1 = WEAKLY CREEPING (DAWSON) 2 = STRONGLY CREEPING (BOREAL) 3 = OTHER _____				

8. LEAF BLADE:

<input type="text" value="3"/>	COLOR: 1 = LIGHT GREEN (GOLFRUOD) 2 = MODERATELY LIGHT GREEN (HIGHLIGHT) 3 = MEDIUM GREEN (JAMESTOWN, KENTUCKY 31)
	4 = DARK GREEN (CASCADE) 5 = BLUEGREEN 6 = GRAYGREEN 7 = OTHER(SPECIFY) _____

12. LEMMA:

<input type="checkbox"/>	mm SHORTER THAN	<input type="checkbox"/>	} COMPARISON VARIETY
<input type="checkbox"/>	LENGTH SAME AS	<input type="checkbox"/>	
<input type="checkbox"/>	mm LONGER THAN	<input type="checkbox"/>	

13. SEED:

<input type="checkbox"/>	5 4	mm LENGTH	<input type="checkbox"/>	1 0	mm WIDTH
<input type="checkbox"/>		mm SHORTER THAN	<input type="checkbox"/>	<input type="checkbox"/>	mm. NARROWER THAN
<input type="checkbox"/>		LENGTH SAME AS Banner	<input type="checkbox"/>	<input type="checkbox"/>	WIDTH SAME AS Koker
<input type="checkbox"/>		mm LONGER THAN	<input type="checkbox"/>	<input type="checkbox"/>	mm WIDER THAN
<input type="checkbox"/>	1 2 6 4	GRAMS PER 1000 SEED	<input type="checkbox"/>		
<input type="checkbox"/>		GRAMS LESS THAN	<input type="checkbox"/>		
<input type="checkbox"/>		WEIGHT SAME AS	<input type="checkbox"/>		
<input type="checkbox"/>		GRAMS MORE THAN	<input type="checkbox"/>		

14. DISEASE, INSECT, AND NEMATODE (0 = Not Tested, 1 = Susceptible, 2 = Resistant):

<input type="checkbox"/> 0	<u>HELMINTHOSPORIUM VAGANS</u>	<input type="checkbox"/> 0	<u>H. SOROKINIANUM</u>	<input type="checkbox"/> 2	<u>H. DICTYOIDES</u>
<input type="checkbox"/> 0	<u>RHIZOCTONIA SOLANI</u>	<input type="checkbox"/> 2	<u>ERYSIPHE GRAMINIS</u>	<input type="checkbox"/> 2	<u>USTILAGO STRIIFORMIS</u>
<input type="checkbox"/> 0	<u>FUSARIUM NIVALE</u>	<input type="checkbox"/> 0	<u>F. ROSEUM</u>	<input type="checkbox"/> 0	<u>TYPHULA IOTANA</u>
<input type="checkbox"/> 0	<u>PUCCINIA GRAMINIS</u>	<input type="checkbox"/> 0	<u>P. STRIIFORMIS</u>	<input type="checkbox"/> 2	<u>P. POAE-NEMORALIS</u>
<input type="checkbox"/> 0	<u>P. CORONATA</u>	<input type="checkbox"/> 0	<u>PYTHIUM ULTIMUM</u>	<input type="checkbox"/> 1	<u>CORTICIUM FUSCIFORME</u>
<input type="checkbox"/> 2	<u>SCLEROTINIA HOMEOCARPA</u>	<input type="checkbox"/>	INSECT _____	<input type="checkbox"/> 0	NEMATODE _____
<input type="checkbox"/>	OTHER _____	<input type="checkbox"/>	OTHER _____	<input type="checkbox"/> 2	OTHER <u>Puccinia crandahlia</u>

15. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics indicate degree of resemblance (D.R.) by placing in the column marked, D.R., one of the following numbers:

1 = Application variety is less than comparison variety
 2 = Same as
 3 = More than, better, greater, darker, more disease resistant, etc.

CHARACTER	VARIETY	D.R.	CHARACTER	VARIETY	D. R.
RHIZOME LENGTH			GROWTH HABIT	Banner	2
LEAF WIDTH	Banner	2	LEAF COLOR	Banner	1
PANICLE COLOR			PANICLE SHAPE	Banner	2
WINTER COLOR			COLD INJURY		
SHADE TOLERANCE	Banner	3	HEAT	Banner	2
DROUGHT			DISEASE • P. crandahlia-Banner		3
			Powdery Mildew	Banner	3

*Specify each disease evaluated.

16. **ADDITIONAL DESCRIPTION:** (Use additional sheets as required)

Describe all characteristics that cannot be adequately described in the form above. Comparative varieties should be used as may be appropriate, such as for disease. Append all comparative trial and evaluation data, including measured characters, environmental, and disease tests.

